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Small Grain Variety Tests in South Dakota 1941-1945

South Dakota Agricultural Experiment Station

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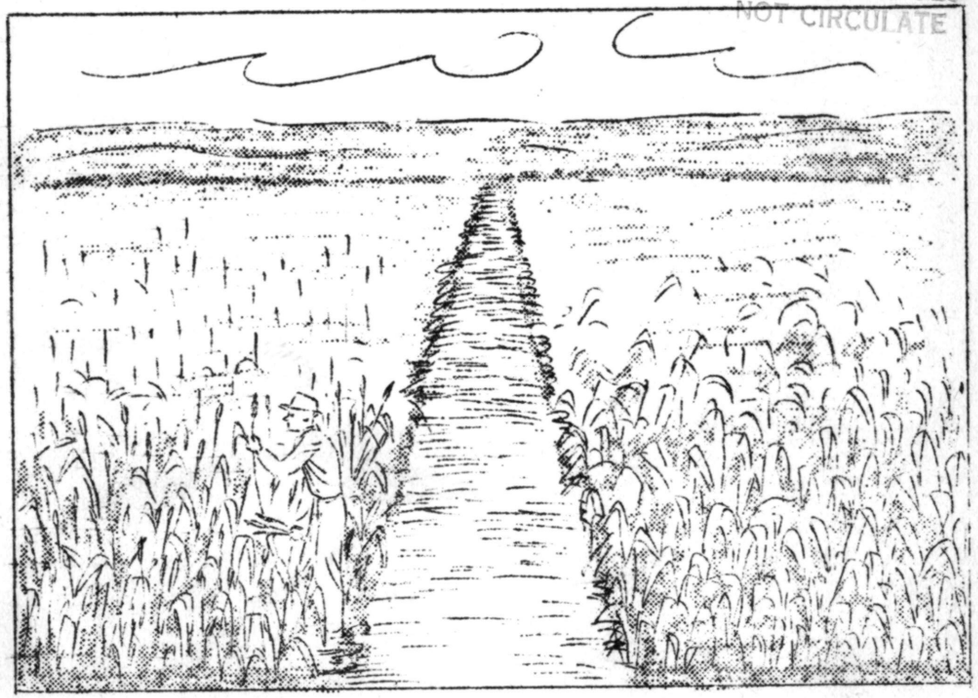
SMALL GRAIN VARIETY TESTS IN SOUTH DAKOTA 1941—1945



Variety Test Plots

Agricultural Experiment Station
South Dakota State College
Brookings, South Dakota

[redacted] Progress REPORT
OF
SMALL GRAIN VARIETY TESTS IN SOUTH DAKOTA
1941-1945

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Small grain variety tests are conducted each year to compare old established varieties with new varieties from other experiment stations, the United States Department of Agriculture, and from the South Dakota Agricultural Experiment Station. The data taken are summarized and used as a basis for recommendations. For the well known varieties, 5-year averages are reported. With the newer ones only the 1945 results are given. It should be emphasized that an average of several years is superior to one year's data.

Description of Tests

Location of Tests. The plots were located at the Main Experiment Station, Brookings, and at the substations at Highmore, Eureka, and Cottonwood. In previous years Vivian was used as a testing station, but in 1945 the nursery was grown at Cottonwood.

At Brookings, the plots were 1/50th acre in size and replicated twice in a randomized block. At the substations, a nursery type test was used. Three replications were seeded with the exception of the Highmore wheat in which five replications were used.

Climatological Data. The 1945 season was unusually favorable for small grain production. Cool temperatures and, in general, ample moisture were conducive to maximum yields and high quality grain. The mean temperatures at Brookings, Highmore, Eureka, and Cottonwood were 3.4, 4.0, 3.6, and 3.9 degrees Fahrenheit below normal, respectively. The rainfall at Brookings and Highmore was .46 and .42 inches above normal and at Eureka and Cottonwood was .35 and .15 inches below normal, respectively.

Agronomic Data (General). The seeding was done on normal dates as recommended for the different areas in the state.

Leaf rust of wheat and oats was prevalent and did considerable damage to susceptible varieties at Brookings. Leaf rust of wheat caused slight reductions in yield at Highmore and Eureka.

Stem rust of wheat and barley was not severe, but stem rust of oats caused considerable reduction in yields in eastern South Dakota. Considerable stem rust was found on Tama, Boone, Vicland, and Vikota which must be due to the increase of races 8 and 10. Clinton showed the best resistance of any variety reported in this pamphlet.

In flax, rust and pasmo were severe at Brookings. Two varieties Dakota and Crystal, were immune to rust, but seed is not yet available to the farmers.

Lodging ~~in eastern South~~ in eastern South Dakota was more noticeable than usual due to the rank growth. At Brookings, the barley varieties Wisc. 38, OAC 21, and Kindred showed weak straw characteristics. The oat varieties Trojan and Clinton showed good strength of straw.

Tables I to VIII include the data taken in 1945 and the average yields for 1941-1945, where available. Disease reaction, heading dates, lodging and date of ripening are given for the Main Experiment Station at Brookings only. Disease reaction of varieties is similar throughout the state wherever conditions are favorable to the development of the disease. However, under usual conditions the diseases mentioned are more prevalent in eastern South Dakota than in central or western South Dakota.

For variety recommendations see South Dakota Extension Circular #416.

TABLE OF CONTENTS

TABLE I. SPRING WHEAT VARIETY TEST AT THE MAIN EXPERIMENT STATION, BROOKINGS, 1945

Variety	Date Headed	Date Ripe	Leaf Rust %	Height In.	Test Wt. Lbs./Bu.	Yield in Bushels per Acre 1945	2 yr. Av.	3 yr. Av.	4 yr. Av.	5 yr. Av.
Hard Red Spring Wheat										
Rival	6/29	8/4	20	46	57.0	40.3	25.8	24.2	27.5	26.2
Pilot	6/30	8/4	20	46	54.5	32.7	25.6	24.4	28.2	26.8
Thatcher	6/28	8/2	80	42	52.0	24.0	19.2	19.4	19.7	18.9
Regent	6/28	8/2	50	42	52.0	26.9	20.7	19.5	21.3	21.1
Ceres	6/30	8/2	70	45	55.5	28.3	16.4	15.4	18.4	17.5
R x T 2259	6/29	8/4	20	46	55.0	40.2	27.9	26.8	31.2	
R x T 2403	6/28	8/2	20	44	57.0	41.0	30.6	28.0	29.8	
R x T 2280	6/28	8/2	30	43	56.5	37.9	30.8	28.1	29.7	
Mida	6/28	8/2	20	46	57.5	42.8	29.4	27.1		
Cadet	7/2	8/5	10	46	53.5	30.6	23.7	22.4		
R x T 2266	6/28	8/2	15	46	55.5	44.8	32.0	29.5		
Newthatch	6/29	8/2	50	41	49.5	26.2	21.2			
Pilot x Mida 1756	6/29	8/2	15	46	59.5	45.1				
Durum										
Stewart	7/2	8/7		55	61.5	44.7	24.5	24.5		
Mindum	6/30	8/6		54	59.5	44.1	24.6	22.9		
LD 153	6/30	8/6		55	58.5	41.6	24.4	22.9		
Carleton	7/2	8/7		56	58.5	38.1	21.6	19.8		
Least Significant Difference						2.5				

TABLE II. SPRING WHEAT VARIETY TESTS, SUBSTATIONS, 1945

Variety	HIGHMORE Test Wt. Lbs./Bu.	Yield in Bushels per Acre 1945	3 yr. Av.	4 yr. Av.	5 yr. Av.	EUREKA Test Wt. Lbs./Bu.	Yield in Bushels per Acre 1945	3 yr. Av.	4 yr. Av.	5 yr. Av.	COTTONWOOD[1] Test Wt. Lbs./Bu.	Yield in Bushels per Acre 1945	2 yr. Av.	3 yr. Av.	4 yr. Av.
Hard Red Spring Wheat															
Rival	58.0	19.3	20.0	21.6	19.2	59.5	16.9	17.7	21.8	25.4	56.2	14.4	16.1	18.1	22.8
Pilot	57.2	21.0	19.7	21.1	19.0	55.2	17.7	15.8	20.0	23.8	55.8	16.7	15.4	17.3	20.6
Thatcher	58.0	19.0	19.2	19.8	17.6	54.5	16.1	15.7	18.6	22.6	54.0	12.3	15.2	15.7	19.0
Regent	57.8	20.3	16.4	17.6	16.4	54.0	17.1	15.6	18.9	23.2	53.5	14.8	13.7	14.9	
Ceres	59.2	19.7	15.7	18.8	16.9	58.2	15.8	14.4	18.3	21.5	58.2	17.3	13.6	16.1	17.8
R x T 2259	58.0	20.5	18.3	20.6		57.8	17.6	18.0	23.0		54.5	17.3	16.4	19.2	
R x T 2403	58.2	23.7	21.7	22.3		57.0	19.2	17.1	20.2						
R x T 2280	59.8	23.0	22.8	23.0		58.0	17.0	15.7	18.2		57.2	14.9	16.3	17.6	
Cadet	54.2	17.9	13.2	14.8		56.5	18.0	16.0	20.1						
Mida	58.8	22.1	20.7			58.5	17.9	19.7			57.8	16.2	16.0		
Newthatch	57.0	20.9	21.4			56.2	15.8	17.7			54.0	14.2	14.5		
R x T 2266	57.0	23.3	20.9			56.0	19.5	16.3							
Least Significant Difference		2.7					2.6					4.3			
Durum															
Stewart	62.8	22.5	16.7			60.2	19.0	14.7			59.8	12.6			
Mindum	61.8	22.7	16.2			61.0	18.2	14.1			59.2	12.0			
Ld 153	62.2	25.0	17.2			59.8	18.3	13.4			57.2	8.2			
Carleton	61.8	24.0	16.3			61.0	18.7	13.7			59.2	9.8			
Least Significant Difference			2.7				3.4					4.1			

[1] 1942-1944 Yields for Vivian

TABLE III. OAT VARIETY TESTS AT THE MAIN EXPERIMENT STATION, BROOKINGS, 1945

Variety	Date Headed	Rust: Leaf %	Rust: Leaf Type	Rust: Stem %	Rust: Stem Type	Lodging %	Lodging Degree	Height In.	Test Wt. Lbs./Bu.	Yield in Bushels per Acre: 1945	2 yr. Av.	3 yr. Av.	4 yr. Av.	5 yr. Av.
Richland	6/27	30	4	5	4	100	20	36	27.0	70.5	50.0	51.5	50.2	46.6
Tama	6/27	5	2	10	4	100	20	36	33.0	99.1	88.2	81.8	80.8	76.0
Vikota	6/27	5	2	10	4	100	20	37	33.5	99.5	86.7	80.4	80.0	75.6
Brunker	6/23	20	4	30	4	100	45	36	29.5	57.8	48.0			
Trojan	6/25	30	4	20	4	Tr.		38	26.5	56.8	48.2			
Clinton	6/27	[illegible]		1	4	100	10	41	36.5	113.7	101.3			
Least Significant Difference										14.3				

TABLE IV. OAT VARIETY TESTS AT THE SUBSTATIONS, 1945

Variety	HIGHMORE Test Wt. Lbs./Bu.	HIGHMORE Yield in Bushels per Acre: 1945	2 yr. Av.	4 yr. Av.	EUREKA Test Wt. Lbs./Bu.	EUREKA Yield in Bushels per Acre: 1945	2 yr. Av.	3 yr. Av.	5 yr. Av.	COTTONWOOD[1] Test Wt. Lbs./Bu.	COTTONWOOD[1] Yield in Bushels per Acre: 1945	2 yr. Av.	4 yr. Av.	5 yr. Av.
Richland	34.2	57.1	56.6	55.2	31.8	45.8	50.3	47.3	55.9	31.0	24.4	28.0	27.9	34.7
Tama	36.0	60.3	65.0	60.1	33.2	47.3	52.2	48.2	59.2	31.[illegible]	31.2	35.0	35.6	
Vikota	35.8	50.0	62.7	61.0	34.2	46.5	46.3	46.7		31.2	29.5	33.8	32.8	
Brunker	37.2	44.9	47.0	56.4	32.8	46.5	39.8	38.1		33.5	27.[illegible]	26.0	33.9	41.2
Trojan	37.2	57.0	61.8	59.5	33.8	36.4	33.0	34.5		32.8	35.9	39.2	35.2	38.2
Osage	37.8	56.2	72.0							33.2	36.1			
Clinton	38.8	60.1			37.2	58.7	63.0			37.2	15.5			
Least Sig. Difference		13.0				10.7					10.6			

[1]1942-1944 Yields for Vivian

TABLE V. BARLEY VARIETY TEST AT THE MAIN EXPERIMENT STATION, BROOKINGS, 1945

Variety	Date Headed	Date Ripe	Lodging %	Lodging Degree	Test Wt. Lbs./Bu.	Yield in Bushels per Acre 1945	2 yr. Av.	3 yr. Av.	4 yr. Av.	5 yr. Av.
Odessa	6/28	7/29	100	20	43	59.3	49.8	46.2	41.0	43.3
Wisc. 38	6/29	7/30	100	45	42	56.0	38.4	36.6	35.6	35.4
Manchuria	6/28	7/30	100	20	46	52.1	40.6	34.3	32.4	33.5
Spartan	6/24	7/27		Tr.	48	51.9	36.1	32.1	30.5	33.6
Trebi	6/29	7/28	100	20	38	47.4	39.9	36.7	35.4	37.9
L x M 1340	6/29	7/30	100	5	44	39.6	30.8	28.1	30.1	31.9
Velvet	6/29	7/29	100	15	41	39.2	29.5	26.5	25.9	27.8
P x V 391	6/26	7/29	100	10	44	62.4	49.4	46.7	42.4	
P x V 385	6/26	7/27		Tr.	44	52.1	46.6	42.7	41.1	
P x D 252	6/24	7/26	100	15	43	54.9	48.7	40.8	40.6	
Tregal	6/28	7/28		Tr.	44	48.5	39.4	35.7		
Plush	6/29	7/27	100	10	39	24.3	22.4	23.4		
OAC 21	6/28	7/28	100	40	42	45.3				
Kindred	6/26	7/27	100	45	44	45.6				
Least Significant Difference						7.7				

TABLE VI. BARLEY VARIETY TESTS AT THE SUBSTATIONS, 1945

Variety	HIGHMORE				EUREKA						COTTONWOOD[1]			
	Test Wt. Lbs./Bu.	Yield in Bushels per Acre			Test Wt. Lbs./Bu.	Yield in Bushels per Acre					Test Wt. Lbs./Bu.	Yield in Bushels per Acre		
		1945	4 yr. Av.	5 yr. Av.		1945	2 yr. Av.	3 yr. Av.	4 yr. Av.	5 yr. Av.		1945	4 yr. Av.	5 yr. Av.
Odessa	49.0	29.5	28.6	26.5	46.0	23.0	24.1	26.5	33.2	38.3	44.0	23.0	16.0	21.6
Spartan	51.8	30.6	29.8	27.0	47.2	13.2	10.5	11.6	22.7	32.2	49.2	10.4	11.4	17.9
Trebi	50.2	39.3	36.2	33.4	46.2	17.8	29.5	31.1	35.1	41.8	44.2	29.4	24.8	31.0
Dryland	50.0	29.2	25.4	22.7	47.2	29.5	16.6	16.8	20.7	29.7	44.0	19.1	15.3	22.1
Wisc. 38	47.8	31.5	30.9		43.8	26.3	29.8	32.8	36.5		42.0	21.0	11.2	
P x V 385	46.2	39.4	38.7		43.2	24.7	34.0	34.5	40.2		42.2	21.3	21.2	
P x V 391	47.0	36.7	34.1		47.0	28.2	33.0	31.0	34.0		46.2	24.7	19.9	
P x D 252	51.2	35.6	36.4		46.2	27.3	23.1	26.2			49.2	18.0	18.6	
Tregal					47.2	21.3	27.1							
Least Sig. Difference		3.3				7.2						5.2		

[1] 1942-1944 Yields for Vivian

TABLE VII. FLAX VARIETY TEST AT THE MAIN EXPERIMENT STATION, BROOKINGS, 1945

Variety	Date of First Bloom	Date Ripe	Rust	Pasmo	Height In.	Test Wt. Lbs./Bu.	Yield in Bushels per Acre 1945	2 yr. Av.	3 yr. Av.	4 yr. Av.	5 yr. Av.
Redwing	6/26	8/4	M	M +	24	55.5	17.7	17.4	16.9	17.1	16.6
Bison	7/1	8/6	H	L +	27	56.0	14.6	15.1	14.2	14.6	14.7
B. Golden	6/25	8/4	[illegible]	H +	20	54.0	20.8	15.0	13.6	13.5	13.3
Buda	7/1	8/6	M -	M	28	56.5	19.8	15.2	14.4	15.0	14.0
Redson	6/26	8/4	M	M +	24	56.5	21.6	18.3	17.0		
Biwing	6/27	8/5	M -	M +	24	56.0	18.6	17.2	16.7		
Koto	7/1	8/7	M +	L	27	55.5	18.0	18.4	17.0		
Crystal	7/1	8/7	[illegible]	L +	27	55.0	22.5	17.4	14.5		
Dakota	7/1	8/8	O	L	29	56.5	24.4	20.4			
Royal	7/3	8/10	Tr.	M	26	57.0	19.6				
Least Significant Difference							3.1				

O = None, L = Light, M = Medium, H = Heavy

TABLE VIII. RYE VARIETY TEST AT THE MAIN EXPERIMENT STATION, Brookings, 1945

Variety	Lodging %	Lodging Degree	Test Wt. Lbs./Bu.	Yield Bu./Acre	3 Yrs. Average
Common	75	45	54.8	37.5	30.5
Dakold	80	45	55.0	39.6	34.8
Imperial	95	75	54.0	35.9	
Balbo	65	30	53.8	38.1	

No significant difference in 1945.

No winter killing took place during the 1944-45 season. Consequently the yields of Imperial and Balbo should be regarded with caution.